

## PROJECT DESCRIPTION

## I. GENERAL

This portion of the project involves the reconstruction of existing Traffic Control Signals at the intersection of US 1 and Charles Armentrout Way in Prince George's County. US 1 is assumed to run a north-south direction. The signal shall be interconnected to 42nd Place / Crittenden Street to the north.

## II. INTERSECTION OPERATION

- The intersection is to operate in a NEMA five-phase, semi-actuated mode, with the US 1 approaches running concurrently. An Exclusive/Permissive left turn phase shall be provided for the southbound approach of US 1. An overlapping right turn phase shall be provided for the westbound approach of Charles Armentrout Way. A pedestrian phase with pushbutton actuation shall be provided across the south leg of US 1. Farside sampling stations shall be provided on both legs of US 1 at this intersection. The 41st Place / Charles Armentrout Way approaches shall also run concurrently. Detection shall be provided via video detection.
- A full-traffic-actuated, eight-phase controller with all necessary equipment housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.

## III. SPECIAL NOTES

- The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.
- All controller cabinet wiring will be performed by the S.H.A. Signal Shop. Contact Mr. Ed Rodenhizer at (410) 787-7650 seventy-two hours in advance of intended work.
- All underground and overhead utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying Miss Utility prior to construction so that all utilities may be located in the field. If the Contractor perceives that a conflict between the utilities and the traffic signal will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved.

## EQUIPMENT LIST

## A. EQUIPMENT TO BE SUPPLIED BY S.H.A.

ITEM NO.	DESCRIPTION	QUANTITY
9042	Controller ASC II with telemetry	1 EA
9044	Controller cabinet, size "6"	1 EA
9087	Video detection interface equipment: 5-8 cameras (To be installed by signal shop).	1 EA
9571	Sheet aluminum signs to consist of: (mast arm)	37 SF
	D3-2 "41 St Place (arrow)/ (arrow) 41 St Place" sign, (dual faced) (variable x 16").	1 EA
	D3-2 "Ch Armentrout Way (arrow) / (arrow) Ch Armentrout Way" sign, (dual faced) (variable x 16").	1 EA
	R10-12 "LEFT TURN YIELD ON GREEN (BALL)" sign, (36" x 42").	1 EA
	R3-5R "RIGHT TURN ONLY" sign, (30" x 36").	1 EA

## B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
2001	Class 2 Excavation.	2.5 C.Y.
2002	Test Pit Excavation	6 C.Y.
5002	5" yellow heat applied permanent preformed thermoplastic pavement marking.	75 L.F.
5006	24" white heat applied permanent preformed thermoplastic pavement marking.	150 L.F.
6001	Furnish and install depressed curb and gutter.	20 L.F.
6004	4" concrete sidewalk.	270 S.F.
8001	Furnish and install concrete for signal foundation.	14 C.Y.
8002	Furnish and install 12" pedestrian signal head section	4 EA
8008	Pre-manufactured camera to controller (200' length) cable	3 EA

## EQUIPMENT LIST (CONT.)

## B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

ITEM NO.	DESCRIPTION	QUANTITY
8009	Pre-manufactured camera to controller (300' length) cable	2 EA
8018	Furnish and install breakaway pedestal pole (10').	1 EA
8018	Furnish and install breakaway pedestal pole (14').	1 EA
8019	Remove and dispose of existing material and equipment per assignment.	1 EA
8027	Detectable warning system (truncated domes).	32 SF
8031	Furnish and install No. 6 AWG stranded bare copper ground wire.	520 L.F.
8034	Furnish and install 3" electrical conduit - galvanized riser.	70 L.F.
8035	Furnish and install 3" weatherhead.	2 EA
8038	Furnish and install 4" schedule 80 rigid polyvinyl chloride conduit - bored.	330 L.F.
8039	Furnish and install 2" schedule 80 rigid polyvinyl chloride - trenched.	35 L.F.
8040	Furnish and install 3" schedule 80 rigid polyvinyl chloride - trenched.	70 L.F.
8041	Furnish and install 4" schedule 80 rigid polyvinyl chloride - trenched.	90 L.F.
8046	Metered service pedestal.	1 EA
8048	Furnish and install electrical cable 1-conductor No. 4 AWG THHN/THWN.	40 L.F.
8054	Furnish and install electrical handhole.	5 EA
8057	Install overhead sign.	37 S.F.
8058	Furnish and install video detector camera.	5 EA
8067	27' steel pole and twin 50'/70' mast arms.	2 EA
8071	Furnish and install 250 watt HPS Luminaire with photocell.	2 EA
8075	Furnish and install ground rod - 4" x 10'.	6 EA
8076	Furnish and install 8" vehicular traffic signal head section.	3 EA
8077	Furnish and install 12" vehicular traffic signal head section	33 EA
8083	Furnish and install electrical cable - 2 conductor (No. 14 AWG).	290 L.F.
8085	Furnish and install electrical cable - 5 conductor (No. 14 AWG).	500 L.F.
8086	Furnish and install electrical cable - 7 conductor (No. 14 AWG).	1510 L.F.
8087	Furnish and install tray cable - 2 conductor (No. 12 AWG).	390 L.F.
8090	Pedestrian pushbutton and R10-4(1) sign. (Note: Sign to read "PUSHBUTTON TO CROSS RHODE ISLAND AVE").	3 EA
8091	Furnish and install 15' bracket arm for traffic signal structure.	2 EA
8096	Install controller and cabinet base mount.	1 EA
Neg.	Furnish and install electrical cable - 1 conductor (No. 250 KCMIL)	340 L.F.

## C. EQUIPMENT TO BE REMOVED

SHA Forces shall remove the controller and all auxiliary equipment from the controller cabinet. The cabinet and all other removed signal materials are to become property of the contractor.

The contact persons for District #3 (Prince George's County) are as follows:

Mr. Majid Shakib  
Assistant District Engineer - Traffic  
Phone: (301) 513-7358

Mr. Wayne Mowdy  
Assistant District Engineer - Maintenance  
Phone: (301) 513-7304

Mr. Augie Rebish  
Assistant District Engineer - Utility  
Phone: (301) 513-7350

Mr. Richard L. Daff, Sr.  
Chief, Traffic Operations Division  
Phone: (410) 787-7630

Mr. Ed Rodenhizer  
Signal Shop  
410-787-7652

Mr. Sonny Bailey  
Sign Shop  
410-787-7670

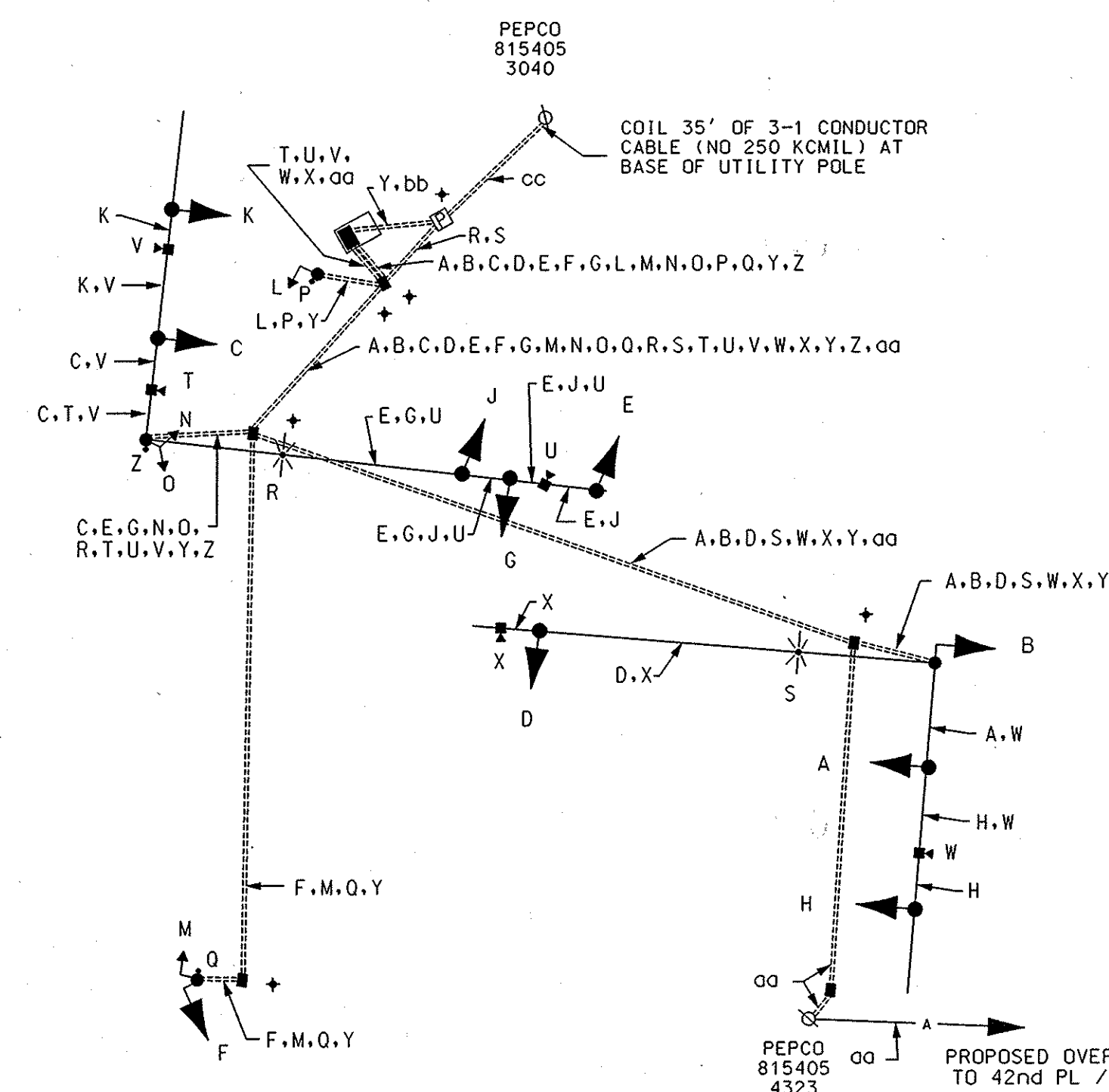
The power company representative is:

Mr. Richard Chilcoat  
PEPCO  
8300 Old Marlboro Pike  
Upper Marlboro, MD 20772  
Ph (410) 590-5500  
Fax (410) 590-6637

## PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)	(R) (Y) (G)
PHASE 2 & 5	R	R	G-G	G-G	G	R	R	R-G	R	R	DW	DW	DW	DW
2 & 5 CHANGE	R	R	G-Y	G-Y	G	R	R	R-Y	R	R	DW	DW	DW	DW
PHASE 2 & 6	G	G	G	G	G	R	R	R	R	R	DW	DW	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	Y	R	R	R	R	R	DW	DW	DW	DW
PHASE 4 & 8	R	R	R	R	R	G	G	G	G	G	DW	DW	DW	DW
4 & 8 CHANGE	R	R	R	R	R	Y	Y	Y	Y	Y	DW	DW	DW	DW
PHASE 4 & 8 ALT	R	R	R	R	R	G	G	G	G	G	WK	WK	WK	WK
PED CLEARANCE	R	R	R	R	R	G	G	G	G	G	FL/DW	FL/DW	FL/DW	FL/DW
4 & 8 ALT CHANGE	R	R	R	R	R	Y	Y	Y	Y	Y	DW	DW	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK

## WIRING DIAGRAM



WIRING KEY	
(A)	7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
(H)	5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
(P)	2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
(R)	2-CONDUCTOR TRAY CABLE (NO. 12 A.W.G.)
(T)	PRE MANUFACTURED CAMERA TO CONTROLLER CABLE (200')
(W)	PRE MANUFACTURED CAMERA TO CONTROLLER CABLE (300')
(Y)	STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
(aa)	12-PAIR VOICE GRADE INTERCONNECT CABLE (SELF SUPPORTING)
(bb)	2-1 CONDUCTOR ELECTRICAL CABLE (NO. 4 A.W.G.)
(cc)	3-1 CONDUCTOR ELECTRICAL CABLE (NO 250 KCMIL)
(+)	GROUND ROD

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION  
Office of Traffic & Safety  
TRAFFIC ENGINEERING DESIGN DIVISION

US 1 AND 41ST PLACE /  
CHARLES ARMENTROUT WAY

DRAWN BY: RC	F.A.P. NO.	TS NO.	SHEET NO.
CHECKED BY: NONE	S.H.A. NO.	25450	2 OF 2
SCALE: NONE	COUNTY: PRINCE GEORGE'S	T.I.M.S. NO.	
DATE: 2/15/05	LOG MILE: 16000101.23	G633	